

What is claimed is:

1. A matching unit for receiving a first frequency band, a second frequency band higher than the first one, and a third frequency band higher than the second one, the matching unit comprising:
  - 5 an input terminal;
  - an output terminal;
  - a capacitor interposed between the input terminal and the output terminal;
  - a first inductor interposed between an input of the capacitor and
  - 10 a grounding;
  - a second inductor interposed between an output of the capacitor and a grounding; and
  - a switching means for switching the first frequency band and the second frequency band;
  - 15 wherein the switching means switches an inductance of the first inductor, and
  - wherein the first inductor shows an inductance property to the first and the second frequency-bands, and shows a capacitance property to the third frequency band.
  - 20
2. The matching unit of claim 1, wherein the first frequency band is a VHF low-band, the second frequency band is a VHF high-band, and a third frequency band is a UHF band.
- 25 3. The matching unit of claim 1, wherein the first frequency band ranges from 90 MHz to 108 MHz, the second frequency band ranges from 170 MHz to 222 MHz, and the third frequency band ranges from 470 MHz to 770

MHz.

4. The matching unit of claim 1 further comprising a second switching means for switching a second inductor, which shows an inductance property to the first and the second frequency-bands, and shows a capacitance property to the third frequency band.

5. The matching unit of claim 4, wherein the first and the second switching means work synchronizing with each other.

6. The matching unit of claim 1, wherein the first inductor is a first series connecting inductor formed of a third and a fourth inductors, and the first switching means switches a junction point of the third inductor and the fourth inductor for connecting an output of the third inductor to grounding.

7. The matching unit of claim 6, wherein the first switching means switches the inductor of the first inductance between the inductance of the third inductance and an inductance of the first series connecting inductor.

8. The matching unit of claim 1, wherein the second inductor is a second series connecting inductor comprising a fifth inductor and a sixth inductor, and the second switching means switches a junction point of the fifth inductor and the sixth inductor for connecting an output of the fifth inductor to a grounding.

9. The matching unit of claim 8, wherein the second switching means switches an inductance of the second inductor between an inductance of the fifth inductance and an inductance of the second series connecting inductor.

10. The matching unit of claim 6 further comprising a circuit board, wherein the third inductor and the fourth inductor are coupled with each other with a conductive pattern on the circuit board, and wherein the conductive pattern, the third inductor and the fourth inductor are coupled to each other with solder.

11. The matching unit of claim 6, wherein the third inductor and the conductive pattern coupled to the third inductor show a capacitance property to the third frequency band.

12. The matching unit of claim 6, wherein the first switching means sets a self-resonance point of the third inductor between the second frequency band and the third frequency band in receiving the second frequency band.

13. The matching unit of claim 6, wherein the first switching means sets a self-resonance point of the first series connecting inductor between the first frequency band and the third frequency band in receiving the first frequency band.

14. The matching unit of claim 1, a resistor of an antenna, which resistor is connected to the input terminal of the matching unit, is generally equal to a resistor viewed from the input terminal of the matching unit.

15. A matching unit to be coupled to an antenna, which matching unit shows a capacitance property to VHF band and shows an inductance property to UHF band, the matching unit comprising:

an input terminal;

an output terminal;

a capacitor interposed between the input terminal and the output terminal;

5                   a first inductor interposed between an input of the capacitor and a grounding; and

                  a second inductor interposed between an output of the capacitor and a grounding,

                  wherein the first inductor shows an inductance property to the  
10   VHF band and shows a capacitance property to the UHF band.